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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : **Confirmation No. 4721**

Koichi HAYASHIZAKI : Docket No. 2001-1573A

Serial No. 09/986,074 : Group Art Unit 1765

Filed November 7, 2001 : Examiner S. Ahmed

KEY TOP AND METHOD FOR
MANUFACTURE THEREOF :

THE COMMISSIONER IS AUTHORIZED
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ACCOUNT NO. 23-0975

REQUEST FOR RECONSIDERATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In view of the following remarks, reconsideration of the rejections contained in the Office Action of December 9, 2003 is respectfully requested.

Claims 8-19, including independent claim 8, are presently pending in this application. In this regard, the Examiner has rejected claims 8-12, 14-16, and 18-19 under 35 USC § 102(b) as being anticipated by the JP'728 reference (Japanese reference 7-164728); and has rejected claims 13 and 17 as being unpatentable over the JP'728 reference in view of the Lee reference (USP 5,387,495). However, for the reasons discussed below, the Examiner's rejections are respectfully traversed, and it is submitted that claims 18-19 are clearly patentable over the prior art of record.

Independent claim 8 is directed to a method of manufacturing a key top. In particular, claim 8 recites forming a metalizing layer on a transfer substrate, and forming a first transparent printed layer in a pattern on the metalizing layer. The first transparent printed layer *is resistant to etching*. The metalizing layer *is etched* so as to remove a portion of the metalizing layer *not masked by the first transparent printed layer*, whereby a transfer layer including the etched metalizing layer and the first transparent printed layer is formed. *After the etching of the metalizing layer to form the*

transfer layer, the transfer substrate is placed on a plastic key top body so as to transfer the transfer layer onto the key top body.

The method of the present invention as recited in independent claim 8 provides several significant advantages. Specifically, the first transparent printed layer performs in a similar manner to a mask because it is resistant to etching. Thus, because the etching-resistant first transparent layer is formed in a pattern on the metalizing layer, the metalizing layer can be etched without the need for performing a separate step of *forming a removable mask* on the metalizing layer before the etching. Consequently, it is also unnecessary to perform a step of *removing* the removable mask after the etching of the metalizing layer is complete. Furthermore, the metalizing layer is protected and reinforced by the first transparent printed layer during transfer onto the plastic key top body, so that the metalizing layer is protected from damage. Thus, as explained in paragraph [0008] on page 3 of the substitute specification, the manufacturing process is simplified so that it becomes significantly more efficient, and the key top manufactured with this process is highly reliable due to less damage to the metalizing layer.

As will be explained in more detail below, there are at least four limitations currently recited in independent claim 8 that are not disclosed or even suggested in the prior art. Those limitations are:

- (1) *etching* the metalizing layer;
- (2) placing the transfer substrate on a plastic key top body *after* etching the metalizing layer (or *any* layer);
- (3) etching the metalizing layer *so as to remove a portion of the metalizing layer not masked by a first transparent printed layer*; and
- (4) forming a first transparent printed layer in a pattern on a metalizing layer, in which the first transparent printed layer is resistant to etching.

With respect to item (1) above, the Examiner asserts on page 2 of the Office Action that “the JP-7-164728 clearly teaches that the metallization layer (4) is etched and thereafter, transferring the transfer layer including the etched metal layer, second transparent layer and the first transparent layer,” and the Examiner refers to Figures 2 and 4 in this regard. Paragraph [0021] of the JP’728

reference indicates that the imprint foil 6 shown in Figures 2 and 4 *may* include a layer 4, and further explains that layer 4 *may* be a metal layer. Furthermore, paragraph [0021] explains that the metal layer can be formed by a vacuum deposition method, a sputtering method, or an ion plating method (see lines 12-15 or paragraph [0021]). However, there is no disclosure or suggestion in this paragraph that the metal layer 4 is *etched*, and the optional metal layer 4 is not discussed in any other location in the JP'728 reference. In this regard, the Examiner is requested to note that the laser etching described in paragraph [0027] of the JP'728 reference refers to the *resin concealment layer* 2, rather than to a metal layer. Thus, it is submitted that the JP'728 reference does not disclose or even suggest *etching* a metalizing layer.

Next, as indicated above in item (2), the JP'728 reference does not disclose etching *any* layer (including a metalizing layer) *prior to* placing the transfer substrate on a body. In this regard lines 5 and 6 of paragraph [0020] of the JP'728 reference explain that translucent coloring layers 31, 32 shown in Figures 2 and 4-6 are formed by "usual" print processes, and lines 14 and 15 of paragraph [0021] explain that the metal layer 4 can be formed by vacuum deposition, sputtering, or ion plating, as explained above. Although paragraph [0027] explains that the concealment layer 2 is etched *after* the imprint foil 6 is transferred onto a plastic body 7, there is no suggestion that either a layer 4 or a layer 31, 32 is etched *prior to* the transfer as in claim 8. Thus, it is submitted that the JP'728 reference does not disclose or suggest transferring a transfer layer onto a body *after* a metalizing layer of the transfer layer has been etched.

With respect to the above item (3), the Examiner asserts that the JP'728 reference "inherently teaches that the portion of the metallic layer is removed, which is not masked or covered by the transparent printed layer by etching in order to expose a lower transparent coloring layer." However, as explained above, the JP'728 reference does not disclose or even suggest *etching* a metalizing layer. Moreover, Figure 2 is the only drawing in the JP'728 reference that shows the layer 4 which, as explained in paragraph [0021], can comprise a metal layer. However, as clearly illustrated in Figure 2, the portion of the metalizing layer not masked by the layer 31, 32 (the first transparent printed layer, according to the Examiner) is clearly not removed. Again, as explained above, the Examiner is requested to note that paragraph [0027] of the JP'728 reference describes etching the

resin concealment layer 2, rather than a metalizing layer. Thus, it is submitted that the JP'728 reference clearly does not disclose or even suggest removing the portion of the metalizing layer not masked by a first transparent printed layer.

Finally, with respect to the above item (4), the JP'728 reference does not disclose a first transparent printed layer that is *resistant to etching*. In this regard, the Examiner has taken the position that the translucent coloring layers 31, 32 of the JP'728 reference correspond to the first transparent printed layer of independent claim 8. However, the Examiner has not even stated in the Office Action that the translucent coloring layers 31, 32 are resistant to etching. Moreover, the JP'728 reference, in fact, does not disclose or even suggest that the layers 31, 32 are resistant to etching. Thus, it is submitted that the '728 reference also does not disclose or suggest a first transparent printed layer that is resistant to etching.

The Examiner asserts that Zhang (sic, the Lee reference) teaches that either laser or conventional wet etching can be used. However, the Lee reference does not disclose or suggest etching a metalizing layer *prior to* placing a transfer substrate on a plastic key top body, and etching the metalizing layer so as to remove *the portion of the metalizing layer not masked by a first transparent printed layer*, in which the first transparent printed layer is *resistant to etching*. Therefore, one of ordinary skill in the art would not be motivated by the Lee reference to modify the JP'728 reference or to combine the references so as to result in the invention recited in independent claim 8. Accordingly, it is respectfully submitted that independent claim 8 and the claims that depend therefrom are clearly patentable over the prior art of record.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance. However, if the Examiner should have any comments or suggestions to help speed the prosecution of this application, the Examiner is requested to contact the Applicant's undersigned representative.

Respectfully submitted,

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